



## **TENDER 2015-07**

**TENDER FOR**

**ONE (1) NEW 2015 TANDEM TRUCK**

**WITH DIESEL ENGINE AND 108" CAB TO AXLE**

**Sealed tenders, clearly marked as to contents, will be received by the undersigned  
until 11:00 am on**

**Tuesday, March 31, 2015**

**Tenders must be submitted on the following form supplied by the Township. All manufacturers' literature must accompany the tender. Where a specific brand name is listed, other equivalent products will be considered. The Township of Zorra will pay for 50% of the total tender price upon delivery to the 'Auxiliary Equipment' manufacturer's yard. It is the responsibility of the proponent to monitor the Township of Zorra website for any addenda that may arise. If addenda are necessary, they will be on the website on or before 12:00 noon on Thursday, March 26, 2015.**

**The lowest or any tender will not necessarily be accepted.**

**Aden Corcoran, C.E.T.  
Director of Public Works  
Township of Zorra  
P.O. Box 306  
Ingersoll, ON N5C 3K5  
(519) 485-2490**

**TENDER 2015-07**

**BIDDER:** \_\_\_\_\_

**ADDRESS:** \_\_\_\_\_

**TELEPHONE:** \_\_\_\_\_

**PRINTED NAME OF AUTHORIZED SIGNING OFFICER:** \_\_\_\_\_

**I AGREE THAT I HAVE CONSIDERED ALL ITEMS IN THIS TENDER AND THE INFORMATION PROVIDED IS TRUE.**

**SIGNATURE:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

**TRUCK NAME:** \_\_\_\_\_

**MODEL:** \_\_\_\_\_

**YEAR:** \_\_\_\_\_

**MAXIMUM OVERALL LENGTH OF UNIT:** \_\_\_\_\_

**DELIVERY DATE:** \_\_\_\_\_

**TOTAL PRICE:** \_\_\_\_\_

**H.S.T.:** \_\_\_\_\_

**TOTAL TENDERED PRICE:** \_\_\_\_\_

**ALL PRICES F.O.B. TOWNSHIP OF ZORRA – KINTORE SHOP**

## **Specification Sheet**

**Cab & Chassis – Diesel – Standard Tandem – C.A. 108"**

**60,000 lbs. G.V.W.**

### **Item Descriptions Compliance**

#### **1. General Specifications**

- a) This specification covers a 60,000 lb G.V.W. diesel snow plow truck. Yes  No
- b) Vehicles must be supplied with suitable components to comply with the following specifications in all aspects. Yes  No
- c) The overall length of this vehicle including snow plow must not exceed 38 feet, two inches. Yes  No

#### **2. Detailed Specifications**

- a) Make

Specify Make and Model: \_\_\_\_\_

- b) Engine must meet current emission standards

Specify Make and Model: \_\_\_\_\_

Describe Means to meet current Emissions, example: EGR, DPF, SCR, DEF, etc.

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### **3. Vehicle Weight**

a) G.V.W.R. 60,000 lb. minimum

Specify G.V.W.R.      Specify: \_\_\_\_\_

b) The allowable G.V.W.R. as supplied shall be shown on a metal or Mylar tag.

Yes     No

c) Chassis weight shall be 17,000 lbs. minimum

Specify: \_\_\_\_\_

### **4. Axles**

a) Front axle shall be Wide Track 20,000 lbs. minimum capacity

Specify make: \_\_\_\_\_

Specify model: \_\_\_\_\_

Specify capacity: \_\_\_\_\_

b) Front wheel seals – wet type synthetic oil

Specify: \_\_\_\_\_

c) Power steering shall be supplied with dual steering boxes. Yes     No

d) A setback front axle is required. Yes     No

e) Rear axle shall be tandem, dual drive with interaxle differential and driver controlled full axle lockup.

Specify make: \_\_\_\_\_

Approved Axles: Meritor MT-40-14X-5DCR-P Inc. .500" Housings & Lube Pump  
Dana Spicer DS405P/RD405P Inc. Lube Pump

Specify model: \_\_\_\_\_

Specify capacity: \_\_\_\_\_

f) Synthetic Lube in Rear axles. Yes     No

g) Road speed in low gear at maximum torque shall not exceed 8 km/hr. @ 1800-engine rpm

Specify: \_\_\_\_\_

h) Approved ratios 5.86 - Maximum Geared speed 70 mph

Specify: \_\_\_\_\_

Ratios: \_\_\_\_\_

## 5. Brakes

a) Air brakes – full ABS

Specify: \_\_\_\_\_

b) Front brakes – S-cam type, 16.5" x 6" minimum with 24 sq/in brake chambers

Specify: \_\_\_\_\_

c) Rear brakes size 16.5" x 8.625" minimum

Specify: \_\_\_\_\_

d) Rear brakes shall be S-cam type with Life Seal brake chambers. Yes  No

e) Dust shields front and rear. Yes  No

f) Positive rear wheel spring loaded parking brake air reservoir and instrument panel switch. Yes  No

g) Means shall be provided to release the parking brakes from the cab with 0 pressure in the main air reservoir with air pressure remaining in either primary or secondary reservoir. Yes  No

h) Audible and red light low pressure indicator shall be supplied. Yes  No

i) Automatic drain valve shall be supplied with heater to drain moisture from the main air tank – Bendix DV-2 heater. Yes  No

j) Tank to have a separate manual drain with pull cord included. Yes  No

k) Air compressor, 16 C.F.M. minimum capacity. Yes  No

Specify C.F.M.: \_\_\_\_\_

l) Asbestos-free brake lining shall be supplied. Yes  No

## 6. Frame

a) Full double frame - resisting bending moment (section modulus x yield strength) shall be 3,240,000 lb. in min.

Specify: \_\_\_\_\_

If front frame extension is required it must also be reinforced

b) Section modulus shall be 27.0 minimum.

Specify: \_\_\_\_\_

c) Note: trucks with trunion type motor require frame reinforcing

Section modulus: \_\_\_\_\_

Frame yield strength: \_\_\_\_\_

d) Mounting of snow plow cheek plates shall be possible. Yes  No

e) Any changes in this area from vehicles previously supplied to the Ministry of Transportation & Communications must be approved by the Equipment Engineering Office Yes  No

f) Provision shall be supplied to prevent diamond shaping of the frame; the frame shall be bridged by a cross-member installed within 10" of the rear of the cab in order to transfer snow plow wing push to each frame rail; this cross-member shall be gusseted fore and aft, and shall conform generally to drawings "A-7-491" and "A-7-492"; it must be approved by the Equipment Engineering Office. Yes  No

g) Frame shall be supplied as per requirements outlined herein with after frame a minimum of 75". Yes  No

h) Provision for installation of front mount crankshaft driven hydraulic pump including crankshaft adapter. Yes  No

i) Air dryer, air tanks, fuel and oil coolers, etc. shall be mounted in a position that shall avoid interference of the wing harness and sand spinner assembly. Yes  No

- j) Body builder access points shall be provided **inside** of cab for auxiliary body lighting installation.      Yes       No
- k) Separate headlight wiring harness with in cab dash switch shall be provided for connection for snow plow headlights.      Yes       No

## 7. **Suspension**

- a) C.A. shall be 108" clean and clear allowing wing harness to be mounted directly behind the cab without any obstruction from exhaust stack, etc.   Yes    No
- b) Wheel base as required to suit 108" CA requested.      Yes       No
- c) Front spring capacity at the ground to match front axle capacity and include rubber auxiliary springs on both sides.      Yes       No
- d) Rear spring capacity at the ground 8,610 kg/20,000 lbs. each minimum. Yes  No
- e) Rear suspension shall be Hendrickson RT-403 or equivalent (with transfer rods).  
Yes    No
- f) Axle spread shall be 54".      Yes       No

## 8. **Wheels and Tires**

- a) Dual rear wheels.      Yes       No
- b) Three (3) front, first line steel belted radial tubeless type tires 425/65r22.5 – 20 ply rating shall be supplied.      Yes       No
- c) Nine (9) rear, first line steel belted radial tubeless type tires 11R x 22.5 – 16 ply rating shall be supplied.      Yes       No

Size: \_\_\_\_\_

Ply: \_\_\_\_\_

Rating: \_\_\_\_\_

- d) Tread design:

Front – standard highway tread – Michelin XZY-3 20 ply   Yes    No

Rear – traction tread – Michelin XDS2 16 ply      Yes       No

- e) Three (3) Accuride 10 bolt hub piloted alloy wheel rims 22.5" x 13.0" shall be supplied.  
Yes  No
- f) Nine (9) Accuride 10 bolt hub piloted alloy wheel rims 22.5" x 8.25" HD .472" shall be supplied. Yes  No
- g) Rims shall have load and pressure ratings equal to or greater than those of tires.  
Yes  No
- h) Mud flaps shall be supplied. Yes  No

## 9. Engine

- a) Diesel, in-line 6 cylinder sleeved engine governed at 1800 R.P.M. with exhaust brake.  
Yes  No

- b) Engine displacement 8.9L/min.

Specify: \_\_\_\_\_

- c) Engine net H.P. 350 H.P. min. at 2000 R.P.M.

Specify HP: \_\_\_\_\_

Specify R.P.M.: \_\_\_\_\_

- d) Minimum net torque shall be 1150 lbs./ft.

Specify net torque: \_\_\_\_\_

- e) Note: required engine ratings must be set at the time of engine manufacture; engines with locally altered ratings are not acceptable. Yes  No

- f) Governor – engine governor – Electronic

Specify: \_\_\_\_\_

- g) Oil Pan shall have extended life coating. Yes  No

## **10. Transmission**

a) Allison 3000RDS-P 6 Speed TCM to be mounted in cab. Yes  No

Specify make: \_\_\_\_\_

Specify model: \_\_\_\_\_

b) Synthetic transmission fluid. Yes  No

c) Transmission oil temperature gauge shall be supplied. Yes  No

## **11. Engine Equipment**

a) Alternator – shall be 200 amp brushless alternator with remote voltage sensor.  
Yes  No

Specify make: \_\_\_\_\_

Specify model: \_\_\_\_\_

b) Battery – maintenance-free type; SAE rating combined 12 volt, 2600 CCA min.; the batteries must be located in a position to avoid interference with wing harness and sander spinner assembly with aluminium battery box cover.

Specify: \_\_\_\_\_

c) Jump start terminals – remote studs. Yes  No

d) High temperature and low oil pressure engine protection alarm bell or buzzer device shall be installed. Yes  No

e) A heavy-duty dual element air cleaner shall be supplied with air intake source inside/outside air with in cab control. Yes  No

f) An automatic temperature controlled on/off type clutch shall be supplied – approved model Horton Drivemaster.

Specify model: \_\_\_\_\_

g) Air restriction indicator shall be supplied on the dash. Yes  No

h) Oil filter – full flow type. Yes  No

- i) Block heater – 1250 watts minimum – immersion type; receptacle under door.  
Yes  No
- j) Exhaust system to be horizontal with tailpipe to be vertical with aluminized steel guard; tailpipe to be on side of cab and must not protrude behind cab and shall not interfere with the sander/spinner assembly or rear wing post. Yes  No
- k) Regeneration Inhibit switch that resets with when ignition is turned off. Yes  No
- l) Note: crankshaft must be located low enough to allow the front mounted pump to operate with sufficient clearance below the radiator. Yes  No
- m) Engine hood shall include Service access door; forward tilting with adequate side access panels with stationary grille. Yes  No
- n) Engine oil Temperature gauge. Yes  No

### 13. Cab

- a) Conventional cab with Premium or upgraded interior with full insulation package to include the following equipment. Yes  No
- b) Seats – separate driver and a single passenger seat shall be supplied that are adjustable fore and aft. Yes  No
- c) Driver's seat to be air suspension, high back (National 2000) or equivalent with arm rest; passenger seat to be air ride; both seats shall be fully padded with heavy duty cloth upholstery construction and 1 chamber lumbar. Yes  No
- d) Sun visors – dual. Yes  No
- e) Suspended brake and accelerator peddles. Yes  No
- f) Interior Grab handles – Yellow. Yes  No
- g) Windshield wipers – internal electric with heavy duty motor and intermittent delay. Yes  No
- h) Lights are to automatically come on with wipers. Yes  No
- i) Fresh air heater and defroster high output. Yes  No
- j) Tachometer. Yes  No

- k) An in-dash hour meter shall be supplied. Yes  No
- l) Radio – AM/FM shall be supplied. Yes  No
- m) 2 Cup holders. Yes  No
- n) Seat belts shall be orange or red. Yes  No
- o) Factory tinted glass all around cab. Yes  No
- p) Floor mat – rubber. Yes  No
- q) Electric power windows (both sides) and power door locks to lock automatically at 10 km/hr. Yes  No
- r) Mirrors – two (2) powered bright finish heads and brackets West Coast type mirrors complete with built-in lights and heaters including heated convex mirrors on both sides. Yes  No
- s) 2 convex heated fender mirrors. Yes  No
- t) Grab bars on each side to assist easy entry and exit shall be supplied. Yes  No
- u) 2 Air horns with snow shield shall be supplied. Yes  No
- v) Air conditioning shall be supplied. Yes  No
- w) Wiring in overhead console for 2 way radio. Yes  No
- x) Tool Box secured in cab or sealed box outside of cab. Yes  No
- y) Flare or Triangle kit and ABC multipurpose 10 lb fire extinguisher. Yes  No
- z) Tilt and Telescopic Steering Column. Yes  No

#### **14. Fuel Tank**

- a) One 264L/70 gal. aluminium tank shall be provided on the left side and include stainless straps. Yes  No

Specify: \_\_\_\_\_

- b) Step or side-mounted acceptable. Yes  No

Specify: \_\_\_\_\_

c) Tank must not interfere with spinner or sander box.

Location: \_\_\_\_\_

d) A fuel gauge shall be supplied. Yes  No

e) Fuel/water separator. Yes  No

## 15. Lights

a) The following lights shall be supplied. Yes  No

b) LED rear red directional lights with arrow lenses Yes  No

c) LED stop lights. Yes  No

d) Five identification streamlined LED cab lights. Yes  No

e) Switch in cab to cycle chassis lights for performing Pre-trip inspection. Yes  No

f) Four-way flasher. Yes  No

g) Back-up lights. Yes  No

## 16. Paint

a) Colour: exterior shall be painted candy apple red. Yes  No

b) Interior to be charcoal. Yes  No

## 17. Attachments

a) Anti-freeze to -40°C Extended Life. Yes  No

b) Rear tow hooks. Yes  No

c) Fender mounted front mud flaps and extensions. Yes  No

d) Bug screen – full radiator coverage. Yes  No

e) Balance panels – under each door. Yes  No

f) Visor over windshield. Yes  No

g) Back up alarm minimum 102 db. Yes  No

h) Complete set of spare filters or first service to performed by Dealer at "No Charge".  
Yes  No

i) Heated Windshield. Yes  No

j) Access Door to allow for checking Engine Oil and Transmission Fluid. Yes  No

k) Engine Hood opening shall not be impeded by Plow Harness or Plow Equipment.  
Yes  No

**18. Warranty**

a) Signed manufacturer's factory warranty shall be supplied. Yes  No

b) Where minimums are called for the vehicle must meet or exceed the capacity, size or performance specified. Yes  No

c) This specification lists only the major details of a unit; therefore, it is the supplier's responsibility to deliver a fully equipped vehicle with compatible components to provide dependable efficient service for a snow plow application. Yes  No

d) Vehicle shall met or surpass the mandatory requirements of the "Canadian Motor Vehicle Safety Regulations" (SOR 84.812) amended, and must bear the National Safety Mark, outlined in those regulations. Yes  No

e) Parts and service manual. Yes  No

**19. Note**

a) Dealer to deliver chassis to the dump body manufacturer. Yes  No

**20. Warranty Description**

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a) Price to install window in right hand door at the bottom front; cost not to be included in tender. \$ \_\_\_\_\_

**21. Groeneveld or approved equal Double Acting Automatic Greasing System to be installed.**

THE FOLLOWING PAGES DETAIL THE SPECIFICATIONS FOR THE SNOW PLOW, WING, BOX AND ACCESSORY ITEMS ALSO KNOWN AS '**AUXILIARY EQUIPMENT**' FOR THE TRUCK CHASSIS SPECIFIED EARLIER IN THIS TENDER.

## Auxilliary Equipment

Description	Requirements	Conform	
		YES	NO
Snow & Ice Control Equipment General Specifications	The snow and ice control equipment supplied under this specification shall be the manufacturer's latest model standard commercial product and shall have demonstrated industry acceptance by having been manufactured and sold in significant numbers to Ontario Municipalities, and shall have been proven in service for the application for at least one year prior to issuing of this tender document		
	The below specifications describe <b>a combination side tilt spreader body, hydraulic power tilt power detach front plow harness, power reversible two way plow, cable lift rear wing harness and wing</b> The equipment bid shall be in compliance with the listed specifications.		
Demonstration	A demonstration of equipment bid may be required, if requested it will be the responsibility of the bidder to arrange this demonstration at the Municipalities location within 5 working days of written notification, all equipment demonstrated will be the exact models offered by the bidder on this tender document.		
References	Where references are requested in this tender document the information must be completed in full and all references supplied are to be for the models of equipment offered by the bidder in the answered specification.		
National Safety Mark	As required by law under the Motor Vehicle Safety Act the intermediate or final stage manufacturer(s) that shall install the combination spreader/dump body and snow plow equipment onto the incomplete truck chassis possess a valid National Safety Mark registered with Transport Canada and will affix their registered National Safety Mark sticker onto the chassis thus certifying the unit as complete.		
Installation	The company that shall install the snow & ice control equipment on to the truck chassis shall be currently actively engaged in the business of snow & ice control equipment installations and shall provide proof of demonstrated ability by providing the following information.  Specify:		

Description	Requirements	Conform
		YES    NO
	<p>Registered National Safety Mark Number of Equipment Installer: _____</p> <p>Name &amp; Address of Equipment Installer: _____ _____ _____</p> <p>List the last 5 installations completed for Ontario Municipality's, provide name of municipality, contact name &amp; phone number</p> <p>1) _____ _____ _____</p> <p>2) _____ _____ _____</p>	

Description	Requirements	Conform	
		YES	NO
	<p>3) _____</p> <p>_____</p> <p>_____</p>		
	<p>4) _____</p> <p>_____</p> <p>_____</p>		
	<p>5) _____</p> <p>_____</p> <p>_____</p>		
Modifications	Any modifications and or alterations made by the bidder to this tender document will result in disqualification of the bidders submission		
Safety	The design and operation must incorporate safety devices and attachments necessary to ensure that the equipment provided is capable of being operated with maximum safety		
	Complete safety and warning decal kit		
Inspection	The vendee reserves the right to inspect the equipment at any stage of manufacturing and/or installation of equipment on to the truck chassis and to have any deviations corrected upon request; a final inspection will be completed by the consignee at the time of delivery.		

Description	Requirements	Conform	
		YES	NO
	A cab layout inspection shall be arranged at the installers location with Township staff to review and confirm the detailed placement of all in cab controls at the time of installation		
	A pre delivery inspection will be arranged at the installers location with Township staff after final completion of the finished installation		
Address	<p>State address of facility where completed equipment will be installed on to the truck chassis &amp; Company name of installer</p> <p>Specify: _____  _____  _____</p>		
Parts	<p>O.E.M. spare replacement parts must be stocked in inventory by the successful bidder in sufficient quantity to provide adequate product support and to ensure timely delivery of spare parts orders and if requested the bidder must be able to provide supporting documentation</p> <p>Specify:</p> <p>Address of Parts Warehouse: _____  _____</p>		
Warranty	Warranty coverage will be for a minimum of one year from the date of delivery, manufacturer's warranty statement will be included with the bid submission		
Manuals	One copy of an operation, parts and service manual will be provided for each unit, hydraulic & electrical schematic drawings must be included in the manual and must be specific to the actual completed installation		
After Sales	It is a requirement of this tender that the bidder maintains an after sales service facility and employees staff qualified to perform after sales service work and that the bidder is also capable of providing in field mobile field service at our location, the bidder if requested must be prepared to provide a tour of this facility.		

<b>Description</b>	<b>Requirements</b>	<b>Conform</b>	
		<b>YES</b>	<b>NO</b>
Prep	All steel components shot blasted prior to application of primer.		
Primer	Two coats of a high quality Epoxy Primer minimum 4 ml. dry thickness, applied to all steel components other than the sander body.		
Rubber Helper Spring	Aeon rubber helper spring installed front right side to prevent chassis sag to the right side with wing installed		
MTO Cross Member	Chassis reinforcement located approximately 10" behind cab between chassis frame rails, designed to withstand forces exerted during wing operation's		
Spreader Body Paint	Spreader body coated with a organic zinc primer and then two coats of Chromate epoxy primer finish paint, Dupont Imron Elite 2.0 dry film thickness backed on		
	Finish paint balance of steel components medium gloss alkyd enamel on syncoat anti corrosive primer wet on wet application		
	There will be no bare steel-to steel contact of any components; all steel surfaces will be painted as per above specifications before final assembly		
Paint Color	Spreader body N1080EF Zorra yellow		
	Plow & Wing black		
Hydraulic Hose	All hydraulic hoses will be properly routed and secured to eliminate abrasion, protective covering will be applied at all potential wear points.		
	All hydraulic hoses must be SAE 100 R16 performance rated Specify: _____		
	All hydraulic hose Eaton Aeroquip Bruiser FC735 Specify: _____		
	Hose hanger tube stainless steel		
C.A. Requirements	All equipment specified including spreader body shall fit on the truck chassis specified with a CA of approximately 142". to be confirmed with installation layout drawing.		
Chain	All lift chain, and safety chain grade 70 proof coil plated with yellow zinc Dichromate.		

Description	Requirements	Conform
		YES    NO
Hydraulic Quick Disconnects	Quick disconnect hydraulic couplers for plow harness & plow functions shall be one hand connect or disconnect under full system pressure, Safeway Flow Master S70 series	
Air Controls	Proportional feather able air controls shall be supplied one for each of the ten individual valve sections in the main valve stack	
	An air dryer lubricator and air protection valve shall be installed in the air control system.	
	The air control mounting stand will be fully adjustable and located between the driver and passenger seat within easy view and reach of the operator.	
	Heavy duty cab floor reinforcement plate and bracing for the pedestal stand	
	Air control pedestal made of brushed aluminum	
Electronics	Lighting switches shall be illuminated function labelled two position paddle switches	
	Switches mounted in brushed aluminum enclosure integral with printed circuit board	
	Total number of switches 9 with capability to control 12 separate functions	
	The switch enclosure shall be complete with manual reset circuit breakers	
	Electrical connection to the switch consul shall be one connection direct plug in	
	The entire switch counsel including the printed circuit board shall be easily removable as a complete assembly	
	Plow lights shall be direct plug in to the OEM chassis plow light connection or a relay and separate harness shall be installed	
	There shall be no cutting of or splicing into the OEM chassis wiring harness by the installer of the snow & ice control equipment	
	All connections shall be either direct plug in to chassis OEM supplied connection or a relay board shall be installed & a entire separate circuit run	
	Electrical sealed weather tight junction boxes mounted in a raised position behind the chassis cab on drivers side above the main valve bank	
Hydraulic Cylinders	All hydraulic cylinders with the exception of the body hoist cylinder shall be in compliance with the following specifications	
	Rated at 3000 psi minimum working pressure	

Description	Requirements	Conform
		YES    NO
	Rod material Stelmi 200 HR .001 thick chrome layer induction hardened to 1045ksi	
	Cylinder seals shall be Hallite	
	All porting shall be SAE O-Ring ports	
	Part number and date code to be stamped into the outside of the barrel	
Hydraulic Valves	Hydraulic valves sectional stackable mounted raised behind chassis cab in a vertical position on the driver's side integral with the rear wing harness	
	Make Hydro Control Model HCD with bronze sleeve shifters.  SPECIFY:  Make: _____  Model: _____	
	The HCD valve stack will include the following ten individual working sections:  1 D.A. Plow Lift                          1 D.A. Power Angle 1 D.A. Tilt Front Harness                1 D.A. Front Of Wing 1 D.A. Rear Of Wing                      1 D.A. Wing Braces 1 D.A Side Tilt                            1 D.A. Upper Harness Lock Pin 1 D.A. Lower Harness Lock Pin         1 S.A. Body Hoist	
Front Mount Tandem Dry Mode Pump	The hydraulic pump supplied shall be a front mount engine crankshaft driven tandem two stage dry mode gear pump.  Specify:  Make: _____  Model: _____	
	First stage 24 GPM @ 2,000 RPM  Specify: _____	

Description	Requirements	Conform
		YES NO
	Second stage 29 GPM @ 2,000 RPM  Specify: _____	
	The first stage of the pump will be dedicated to the operation of the spinner and conveyor system	
	The second stage of the pump will operate all plow/wing functions and the body hoist	
	Single stage one-section hydraulic pumps will <b>NOT</b> be acceptable.	
	There will be <b>NO</b> flow divider valves used to split oil flows between spreader and plow / wing functions.	
Oil Reservoir	Oil reservoir of 35 U.S. Gal. capacity, 3/16" pickled and oiled steel, welded oil tight integral with rear wing harness, raised above chassis frame rails behind chassis cab  Specify:  Capacity: _____ U.S. Gl.	
	Reservoir to have a weather proof screw down filler / breather cap with fine mesh screen and provisions for clean out by hand.	
	A removable magnetic trap shall be supplied.	
	The oil return port shall be fitted with a diffuser to prevent turbulence and foaming of oil on the inside of the reservoir.	
	Oil level and temperature gauge	
	<b><u>Hydraulic filter element for return line spin on filter assembly 10 micron absolute.</u></b>	
	<b><u>Hydraulic filter element for pressure side spin on filter assembly 10 micron absolute.</u></b>	
	Oil shut off valve to be installed.	
	Low oil level indicator with warning light in chassis cab	
Spreader Body	The body will be a combination unit dumping to the rear and shall incorporate a hydraulic tilting floor to allow conversion to the spreading mode.	

Description	Requirements	Conform	
		YES	NO
	<p>Model MG 1415 or equivalent in compliance with the below specifications and approved by the Township</p> <p>Specify: Make: _____</p> <p>Model: _____</p>		
Construction	<p>Outside length 15 ft.</p> <p>Specify: _____</p>		
	<p>Inside length 14 ft.</p> <p>Specify: _____</p>		
	<p>Overall width outside 98"</p> <p>Specify: _____</p>		
	<p>Overall width inside 86"</p> <p>Specify: _____</p>		
	<p>Height of sides 38" inches from conveyor floor</p> <p>Specify: _____</p>		
	<p>Height of front panel 53" to match chassis cab</p> <p>Specify: _____</p>		
	<p>Height of tailgate 48 inches from conveyor floor</p> <p>Specify: _____</p>		

Description	Requirements	Conform
		YES    NO
	Cab shield 24" 10 gauge Cor-ten steel	
	All body welds will be 100% continuous inside and outside	
	Front head high tensile Hardox 450 3/16" corrosion resistant high tensile steel plate (203,000 lbs/in <sup>2</sup> tensile strength), reinforced with (2) channels	
	Sides high tensile Hardox 450 3/16", reinforced with 3 verticals side posts (203,000 lbs/in <sup>2</sup> tensile strength)	
	Floor high tensile Hardox 450 3/16", reinforced with 3 verticals side posts all welded 100% (203,000 lbs/in <sup>2</sup> tensile strength), with 3 channel cross members	
	Tailgate high tensile Hardox 450 3/16", reinforced with vertical and horizontal boxed bracing (203,000 lbs/in <sup>2</sup> tensile strength)	
	Top rail of body 4 inch x 4 inch x 3/8 inch square tubing	
	All horizontal bracing tapered to shed dirt	
	Body inside width to be tapered from front (cab end) of body to rear (tailgate end) of body design for quick load release	
	Front(cab end) inside body floor to be 1" wider than rear (tailgate end) of body floor width	
	All floor reinforcement via cross members only and shall be free of any honey comb or lattice type woven floor reinforcement or understructure	
	The floor and the right side of the body shall raise as one integral unit and tilt to the left to feed the conveyor	
	Conveyor with a front discharge chute installed on the left side of the floor	
	Adjustable manual discharge gate installed at the left front side adjustable manual discharge gate installed at the left front side of the body for the purpose of controlling the amount of material to the spinner	
	Hinges on the lifting floor section 1-1/4", stainless steel all bushings complete with grease fittings	
	Remote mount grease fittings for side tilt hinge with one central grease bank	
	The design of the hinge shall prevent any accumulation of material which could cause stress in this critical area	
	Sides and the floor joined together by a QT-400 3/16" plate	
	Right curb side mounted integrally with the lifting floor and a solid curb side outer wall shall provide added strength, security and support	

Description	Requirements	Conform
		YES    NO
	Curb side outer wall shall provide protection for the side tilt floor section as well as the rear and front corners against loading damages	
	Longitudinals consist of 2 -10 structural channels joined at the rear by a 13" apron	
	Two 4" x 4" tubing reinforcements located between the two channels at the point where the two side tilt cylinders are fixed	
	A 3/8" plate joining the channels at the front and provides attachment point for the cylinder base	
	Safety prop installed under the body to support the weight of the empty body in the raised side tilt position	
	Safety prop installed at front hoist to support the weight of the empty body in the raised dump position	
	One shovel holder in accessible position right front side	
	Hardwood side boards 2" x 10" painted black	
Dual Function Tailgate	Dual function air trip tailgate actuated from inside chassis cab	
	Air trip actuated via one single air brake chamber	
	Spreader chains & brackets 5/16" minimum 70 proof coil	
	Tailgate chains enclosed in protective cover	
	Height adjustable asphalt gate located lower centre of the tailgate	
	Top hinges and vertical hinges on left side	
	Tailgate shall open to unload body to rear and will also swing open as a barn door and latch against the outside passenger side of the spreader body	
	Latch handle assembly for swing out door operation located lower drivers side at rear at man ground reach level	
Hoist	Front mounted 2 stage telescopic cylinder with 30 ton capacity CS series rod sealed	
	Rear dump angle variable to 50 degrees.	
Side Tilt Cylinders	Lifting floor raised by two, 4" diameter (I.D.) x 22" double acting cylinders into the spreading position	

Description	Requirements	Conform
		YES NO
	Oil flow divider in order to ensure uniform lifting of the dual cylinders under the floor	
	The floor in the full lift side tilt position will be at more than 38° to horizontal	
Main Conveyor	Conveyor recessed along body left side for the entire length of the dump box floor	
	Pintle chain self-cleaning consisting of 2 strands of 14,000 pound ultimate strength steel C-188 with 3/8" x 1 ¼ " bar flights on every second link	
	Pintle chain flights welded to every second chain link	
	The chain shall travel in a recessed trough with a 3/16" thick QT-400 steel floor	
	Outside chain width 18 ¾"	
	Drive gear box driven by a hydraulic motor with 25:1 reduction worm gear	
	Drive gear box with brass gears	
	Drive motor with replaceable integral built in speed sensor fully immersed in hydraulic oil	
	Drive gear-box mounted with 1 ½" drive shaft two 8 tooth sprockets and a flange bearing	
	Idler end, fitted with two bearings mounted on a sliding system with a 1 ½" shaft and two idler sprockets	
	Idler bearings complete with remote grease lines and grease fittings mounted in a accessible position on the lower drivers side of the body corner post	
	Chain tension adjusted via 2 grease cylinders mounted with the seal at top of the cylinder, not on the bottom of the rod	
	Protective conveyor cover with hinges and grease fittings provided for protection when the body is used for conventional hauling	
	Conveyor cover made of high tensile Hardox 450 3/16"steel	
Spinner Assembly	Polyurethane spinner shall be installed on left side to spread ahead of rear wheels	
	Spinner vanes shall be curved design	
	Spinner disc flat design and not cone shaped	
	Hydraulic motor shall drive the spinner assembly	

Description	Requirements	Conform
		YES    NO
	Adjustable poly spinner chute with vibrator	
	The spinner shall be capable of spreading evenly up to a 20 FT radius with a main operating range of 0 to 15 FT radius.	
	Spinner assembly capable of discharge rate from 100 lbs./lane mile to 2500 lbs./lane mile.	
	The spinner disc shall be complete with anti caking device to help prevent material build up on the spinner disc	
	Hydraulic hoses to the spinner motors are to be complete with quick disconnect automatic sealing breakaway couplers and are to be assembled so that the male end may plug into the female end on the spinner motor when the spinner assembly is disconnected and removed	
	Incandescent spinner spotlight	
Automated Spreader Control System	Latest generation Dickey-john Flex Four spreader control with 2-section valve for granular functions  Specify _____	
	Calibration keyboard for Dickey-john Flex Four spreader control	
Fenders & Mud Flaps	One pair of aluminum fenders over rear dual wheels attached by brackets to chassis frame rails	
	Poly spacers between tops of fenders and fender mounting brackets	
	Mud flaps located fore and aft of the fenders	
Load Cover	An air tarp shall be standard equipment with fabricated tarp arms dimensions of 1 ½" X 2 ½" steel tubing and 1/8" mesh tarp	
	The load cover shall be powered by a single cold weather rated air cylinder mounted under the body between the chassis frame rails	
	Tarp actuated via in cab control	
	Tarp arms shall be offset dog leg design	
Lights & Wiring	Lights and wiring shall be completely sealed modular Grote Ultra Blue Seal wiring system	
	Dialectic grease applied at all connection points	
	Cab shield mounted Grote 76803, 15 ¾" high intensity amber rotating mini bar with 76805 blue lens	
	Self flashing six inch oval LED strobes one blue and one amber rubber grommet mounted in upper rear body corner posts	

Description	Requirements	Conform
		YES    NO
	LED 4" round blue and amber strobes at end of chassis frame rails mounted inside stainless steel enclosures	
	Dual corner post light bracket removable raised light w/ lamps in LED with 2 x 4 inch red's, 2 x 7 inch red's and 1 x 4 inch left side blue strobe	
	Two six inch LED back up lights in rear corner posts	
	Four LED six inch oval red, combination stop, tail & turn rubber grommet mounted in rear body corner posts	
	Spinner light shall be included	
	Yellow and amber clearance lights front & rear of body left & right side LED	
	Rear 3-in a row clearance lights LED	
	Remove OEM chassis tail lights and return in chassis cab	
Pintle Hook	Heavy duty pintle plate, fabricated from 44W steel plate, rated for hook capacity Buyers BH10-2000 with 2" ball mounted at 24" from ground level Two safety eyes installed on pintle plate Seven wire trailer plug with relay board and separate circuit no splice connection to chassis wiring	
Hydraulic Power Tilt Power Detach Plow Harness	Viking model VCL 500HD or equivalent in compliance with the below specifications and approved by the Township  Specify: MAKE: _____ MODEL: _____	
	The front plow harness shall tilt forward to allow the chassis hood to tilt forward over centre of its pivots and stay open without the need of any additional supports	
	The harness tilt and return function shall be performed by the operator from inside the chassis cab via feather air over hydraulic control.	

Description	Requirements	Conform
		YES    NO
	The plow, wing, wing front post and removable portion of front harness to be easily and quickly attachable or detachable as one integral assembly	
	Swing arm: The male swing arm to be rotated on the shaft, and the hub ends are to be guided by four anti-friction polymer discs in the mounting bracket.	
	The swing arm is to be operated by two double acting hydraulic cylinders with the following specifications:	
	Piston diameter 2 1/2"	
	Piston rod diameter 1-1/18"	
	Stroke 6"	
	The cylinder rod's shall be hard chrome plated and buffed	
	These cylinders shall permit the front harness to tilt forward by disengaging the top and engaging the bottom hydraulic operated lock pins.	
	The truck hood (cab) can be tilted forward for easy access to the engine without detaching the front harness from the truck.	
	Hydraulic locking shall be achieved by two double acting, hydraulic cylinders with chrome piston rods.	
	One cylinder shall provide upper locking and the other cylinder shall perform the lower locking function.	
	Two double acting valve sections incorporated in the main valve stack to provide hydraulic power to the upper and lower lock pin cylinders	
	For safety, the lock cylinder controls shall be mounted outside of the cab on the driver's side of the front harness in a position to allow the operator visibility of the hydraulic lock pins while performing the lock or unlock function.	
	Upper and lower harness lock pins shall be visible for sight check by operator to ensure the lock pins are engaged	
	Lock pin controls enclosed in protective enclosure with safety lock and vertical hinged opening door	
	Two independent in cab feather joystick air controls will be pedestal mounted inside the chassis cab, one control will operate exclusively the plow lift function and the second control will operate exclusively the hydraulic power tilt function.	
	Single valves & controls operating multiple functions will not be acceptable.	

Description	Requirements	Conform
		YES    NO
	Plow shall be equipped with VBL Polar Flex Blades	
	The front plate will be one solid piece of 3/8 inch steel plate with cut out of sufficient size to allow cooling of the chassis radiator.	
	Front plate minimum 44W steel plate	
	Overall height of the front plate will be approximately 49 inches with a 5.25 inch 90° degree bend at the bottom.	
	Overall width of the front plate will be approximately 57.5 inches at the top and 40 inches at the bottom.	
	Upper cross channel 6" by 52" 13 lbs./ft. welded to the right and left side plate	
	End plate located on upper cross channel 1/2" material 12" x 6" to provide upper mounting location for wing front post	
	Cheek plates will be specified to suite chassis frame rails, 1/2" 44W steel plate and will extend back along the chassis frame rails as far as possible.	
	Fasteners attaching cheek plates to the chassis frame rails will be minimum grade 8 N.C. hex head bolts	
	Two pairs of drive ears 100% welded to the front plate spaced at standard 30 1/2" centers	
	Three sets of plow drive bar connection holes located in drive ears height to lower drive connection 19" mounted with truck empty	
	Quick-tack hitch pockets bolted to drive ears	
	Lift or grab link for nose chain shall be 18" minimum	
	Hydraulic plow lift cylinder, double acting 4" diameter with 10" stroke, cylinder rod chrome plated	
	Plow lift yoke 3/4" steel plate, braced with two 1/4" x 2" flat bar diagonal braces.	
	Two mounting locations in lift yoke to provide location for mounting of plow hydraulic lift cylinder in winter operating position and stored summer position	
	Mounting plates for plow lift cylinder lift yoke and lift yoke braces all 1/2" 44W steel plate 100% welded to front plate.	
	Lift yoke brace mounting plates positioned to provide minimum 23.5" span.	
	Two sealed beam halogen plow lights with high and low beam and built in integral directionals	
	Right and left side plow light mounting brackets extending 7" up from top of front plate with light mounting positions on 55" centers	

Description	Requirements	Conform
		YES    NO
	Vapor proof wiring for plow lights, with direct no splice plug in connection to OEM chassis wiring connection	
Cable Wing Harness	<p>Viking Model VCL350SCL or equivalent in compliance with the below specifications and approved by the Township</p> <p>Specify: Make: _____ Model: _____</p>	
	The wing harness shall be of heavy construction to sustain snow plowing operations under severe conditions	
	Bottom of wing tower shall be protected by shoe, and shall have a ground clearance of 14" minimum, truck empty.	
	The spacing of the holes in the slides for connecting the wing braces shall be approximately 17".	
	Approved size of ram controlling the front end of wing shall be 3" dia. x 30" stroke approx. with a cable and sheave assembly	
	Approved size of ram controlling the rear end of wing shall be 3" dia. x 30" stroke approx. cylinder, with a cable and sheave assembly	
	Approved size of ram controlling wing brace slide shall be 3" dia. x 36" stroke approx. and shall be double acting	
	Hydraulic cylinder piston rods shall be hard chrome plated	
	The wing tower shall be of a heavy construction and bolted to the right side of the truck chassis	
	Wing tower shall be of 10" channel construction with a 25 degree offset and its mountings shall be sufficient to sustain snow plowing operations under severe conditions.	
	One pipe brace 2 3/4" diameter shall connect the bottom of the wing tower and the truck chassis near the forward mount of the right rear springs to reduce the shock of the truck frame	
	The rear wing tower shall be heavily braced and gusseted to the frame Cheek plate	
	For maximum strength two channels shall be used to form a triangular support integral with the rear post	
	Wing blade shall be VBL Highwear	

Description	Requirements	Conform
		YES    NO
	The first channel shall be 4" x 66 ½" 13.8 lb/ft sloping diagonal brace	
	The second channel shall be 4" x 40" 13.8 lb/ft horizontal brace bolted to the chassis rails and welded to the brace box.	
	Two triangular stiffeners shall be incorporated into the assembly	
	All sheave pins shall be provided with oil impregnated bronze bearing and grease fitting	
	A safety chain shall be provided for securing wing when not in use.	
	Guide bars to contain the rear wing slide shall be welded 100% from the bottom up 2 feet	
	The front post shall be fabricated of 8" minimum I Beam 18.4 lbs/ft.	
	The 8" I beam front post shall be triple certified in compliance with G40.21 manufactured from 50W steel minimum	
	Front trip hinge with internal wire trip spring, 7" minimum width	
	Rear wing brace slide fully cable operated	
Additional	Rear of wing spot light supplied and installed 6" round incandescent	
	Convex mirror 12" mounted on front wing post	
Power Angle Plow	These specifications describe a hydraulic ram reversible snowplow with compression trip	
	Viking Model VCL 361145C or equivalent in compliance with the below specifications and approved by the municipality  Specify: Make: _____ Model: _____	
	Constructed to prevent the accumulation of water in any area.	
	<b><u>Path Cleared - Bulldozing 11'</u></b>	
	<b><u>Path Cleared - At 35° 9'10"</u></b>	
	<b><u>Set at 50° attack angle, the overhand from the cutting edge to the front of the moldboard shall be 20" minimum.</u></b>	

Description	Requirements	Conform
		YES NO
	<b><u>Set at 60° attack angle, the overhang from the cutting edge to the front of the moldboard shall be 25" minimum.</u></b>	
	<b><u>Set at 50° attack angle, the height from the ground to the front of the moldboard shall be 28" maximum.</u></b>	
	Set at 60° attack angle, the height from the ground to the front of the moldboard shall be 24" maximum.	
Mouldboard	Moldboard fabricated from 10 ga. steel	
	<b><u>Eight 44W steel 3/8" thick reinforcing ribs 100% welded to the moldboard.</u></b>	
	<b><u>The bottom of the moldboard reinforced with a 1/2" x 6" x 4" backer angle.</u></b>	
	A second angle 3/8" x 3" x 2" welded above for added strength and rigidity.	
Safety Trip	The safety trip shall consist of two compression coil springs incorporated in the drive frame, which will allow the moldboard to float over obstructions.	
	The two compression trip springs will be 5/8" wire, 5 1/4" O.D., 14" free length with a total of 8 active coils.	
	When the plow trips the moldboard will ride up on the drive frame and return to the normal plow position after the trip action is completed	
Drive Frame	<b><u>The drive frame shall be of A-frame and sector design.</u></b>	
	<b><u>The A-frame will be constructed of 3 1/2" x 3 1/2" x 1/4" square tubing with two 3/4" thick pivot plates.</u></b>	
	<b><u>Sector frame constructed of 4" x 4" x 3/8" square tube.</u></b>	
	<b><u>The sector angle shall provide a 30° radius and</u></b>	

Description	Requirements	Conform
		YES NO
	<b><u>be constructed of ½" x 3 ½" x 2 ½" steel.</u></b>	
	<b><u>To prevent wear, the sector will glide between two low friction replaceable polymer bearings bolted on the A-frame.</u></b>	
	Four hinge points are to be provided to connect the moldboard to the push frame, spanning a minimum distance of 80".	
	Quick tach oscillating beam shall be supplied.	
Shoe Kit	<b><u>Two height adjustable self-steerable shoe holders &amp; brackets shall be fitted on the drive frame.</u></b>	
	These shoes shall carry the weight of the plow when the moldboard trips	
Power Angle Cylinders	Two 3" x 14" double acting hydraulic cylinders to reverse the plow to a maximum of 35° right or left	
	<b><u>To prevent damage to the reversing cylinders, a cross-over relief valve shall be supplied.</u></b>	
Lift Chain	<b><u>Three 3/8" 70 Proof Coil lift chains shall be provided to lift the plow to the carrying position.</u></b>	
	<b><u>These chains must be as wide spread as possible in order to make the plow stable, and the plow must remain level when carried.</u></b>	
	<b><u>It will be possible to perform the power angle function with the plow in both the lowered working position and the raised carrying position and the plow will remain level</u></b>	
Quick Tach	Fitted with oscillating beam to suite Quick-Tach hitch	
Cutting Edge	One sectional carbide cutting edge three sections 7/8" x 6" x 44" each	
Shoes	Two standard moldboard shoes	
	Two standard skid shoes	

Description	Requirements	Conform
		YES    NO
Deflector	Right & Left side heavy duty wrap around curb runners	
Marker Rods	Full length rubber deflector ½" x 12"	
Marker Rods	One 36" flexible fluorescent orange marker rod	
Wing	<p>Viking model VCL144WHD or equivalent in compliance with the below specifications and approved by the Township</p> <p>Specify:</p> <p>Make: _____</p> <p>Model: _____</p>	
	Overall length 12 feet.	
	Inside intake height 29".	
	Outside discharge height 39"	
	Moldboard thickness 10 U.S.S. gauge minimum.	
	Two drive ribs for connecting the wing brace shall be provided	
	The drive ribs shall be located approximately 8"6" and 10'10" from the nose end of the wing.	
	The plate for mounting the wing to the wing post shall be 1" thick. The mounting hole shall be far enough from the edge of the plate to Avoid failure in this area	
	Lower wing angle shall be 6" X 4" X ¾".	
	The mounting of the nose end of the wing to the wing post shall be by means of a hinge and rectangle spring, to allow tipping over the wing	
	Two adjustable wing braces shall be supplied	
	The upper brace shall be of a stock release type, including a spring retraction. The spring shall provide adequate stability of the wing in normal operating conditions, and shall retract the wing from tip-over position.	
	The distance between the center of the mounting holes of the wing Braces shall be as follows	

<b>Description</b>	<b>Requirements</b>	<b>Conform</b>	
		<b>YES</b>	<b>NO</b>
	Upper brace – Extended 90" C.C.		
	Collapsed 60" C.C.		
	Extended distances shall be measured with spring fully retracted		
	Lower brace – Extended 88" C.C		
	Collapsed 58" C.C.		
	One spare pin for adjusting the wing braces shall be supplied with each Brace.		
	The top edge of the wing shall be boxed in and welded 100% to the ribs And the moldboards so as to avoid all pockets		
	Florescent orange 36" flexible marker rod		
	One Valley Blades high wear wing blade with built in shoe blocks		
	One standard curb runner		

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